

2014

# WSDOT Cost Recovery Plan – Materials Laboratory

Based on FY2013



**Washington State  
Department of Transportation**

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Department  
Of  
Transportation –  
Materials  
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## Section 1

### Cost Recovery Plan Summary

#### *Materials Laboratory*

#### The Materials Lab Charter

The State Materials Laboratory, which includes the Bituminous, Chemical, Electrical, Physical Testing and Soils Laboratories, serves as the central testing laboratory for the Washington State Department of Transportation. These AASHTO Accredited laboratories perform various tests to ensure the materials used meet the appropriate American Society for Testing Materials, American Association of State and Transportation Officials, or Department specifications. The Materials Labs also provide materials testing and research to further the field of transportation and provide new and enhanced solutions for long-lasting and cost-effective design, construction and maintenance.

#### Funding Sources & Customer Base

Materials Lab operations are funded with State, Federal and Local dollars. While the local funding source is small by comparison, the \$1.61 million recovered in CY 2012 represents additional revenue to the Department and it helps defray the cost of Mats Lab services for WSDOT projects.

#### Materials Lab Funding Sources

Source	CY 2011		CY 2012		Delta	
	Recoveries	Percentage	Recoveries	Percentage	Recoveries	Percentage
State	15,081,282	61%	10,876,060	53%	-4,205,222	-8%
Federal	7,705,223	31%	7,864,752	39%	159,528	7%
Local	1,858,898	8%	1,610,468	8%	-248,430	0%
Total	\$24,645,403	100%	\$20,351,279	100%	-\$4,294,124	0%

The vast majority of work performed at the labs supports the Department's Improvement (I) and Preservation (P) programs and we have begun to experience a modest drop in demand for services in both programs.

#### Materials Lab Customer Base

Program	CY 2011		CY 2012		Delta	
	Recoveries	Percentage	Recoveries	Percentage	Recoveries	Percentage
Improvement	14,933,873	61%	11,634,786	57%	-3,299,088	-3%
Preservation	7,900,765	32%	6,609,067	32%	-1,291,699	0%
Local Programs	1,007,727	4%	1,471,758	7%	464,031	3%
All Others	803,038	3%	635,669	3%	-167,369	0%
Total	\$24,645,403	100%	\$20,351,279	100%	-\$4,294,124	0%

## Changes in Demand for Services

The table below illustrates some the changes in the top five recovery sources within the I-Program. Note the general decline in services demanded. The Columbia River Crossing Project shows the sharpest decline as much of the Geotechnical Drilling has been concluded there. The Mats Lab cannot affect the volume of testing and engineering services demanded. When the Transportation program contracts, expenditure reductions and/or rate increases are needed in order to balance costs and revenues. The opposite is true in an expanding program.

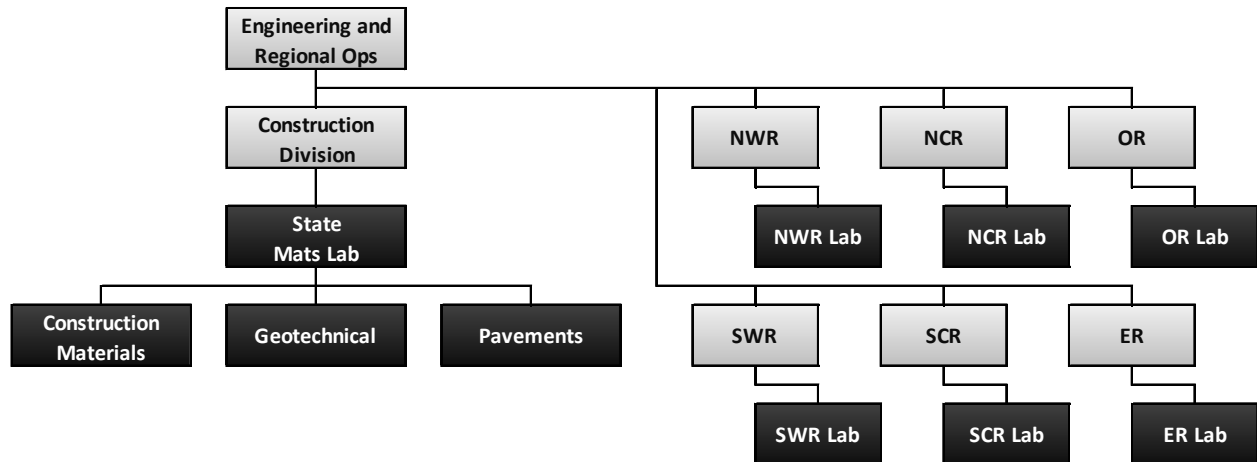
### Changes in I-Program Customer Base for CY12

CY 2011		CY 2012	
I Program Project	Recoveries	I Program Project	Recoveries
Columbia River Crossing Project- Vancouver	\$ 1,778,794	Sr520/Medina To Sr202 - Transit And Hov	\$ 832,180
Sr520 / I-5 To Medina - Bridge Replacement & Hov	\$ 1,557,059	Columbia River Crossing Project- Vancouver	\$ 714,539
I-90/Keechelus Dam Vicinity-Build Wildlife Bridge/Add Lanes	\$ 576,629	I-90/Snowshed To Keechelus Dam Phase 1c- Replace Snowshed Add	\$ 581,597
I-5/Sr161/Sr18 Interchange Improvements	\$ 549,385	I-90/Keechelus Dam Vicinity-Build Wildlife Bridge/Add Lanes	\$ 577,747
Sr520/Medina To Sr202 - Transit And Hov	\$ 537,467	I-5/Sr 16/Eb Nalley Valley - Hov	\$ 478,763
Total	\$ 4,999,332		\$ 3,184,825

## Section 2

### Organization Chart

#### *Materials Laboratory*



The HQ-based State Materials Lab is headed by the State Materials Engineer and comprised of three divisions: Construction Materials, Geotechnical and Pavements. The State Materials Lab comprises about 76% of WSDOT's materials lab assets. The remaining 24% is divided among six smaller "Region Materials Labs" that perform a relatively narrow scope of work in proximity to construction projects. These labs are region assets and the Region Materials Engineers who head them report to their respective Region Administrators. Although the decentralized reporting structure, cost recovery rates and operating budgets are developed managed at the State Lab.

## Section 3

### Billing Methodology

#### *Materials Laboratory*

#### Introduction

Cost recovery rates for Materials Lab Testing and Services are developed in two phases:

- Creation of *schedules*, which include common factors and calculations, and
- Computation of *rates*, which combine the various schedules to form the final cost recovery charges.

This submission for cost recovery rates evaluated as of May 30, 2013, derives the schedules schematically and presents the format for the rate calculations.

The overall schedule and rate structure is unchanged from the previous submittal. In the discussion which follows, the rationale for the calculations will be presented and the sources of the particular information will be identified.

These cost recovery rates apply to all organizations within the consolidated Materials Laboratory: Lab, Drill Crew, and Inspection Section as well as the six individual region labs. Within this consolidated organization, many common tasks or activities are performed with different grade levels of staff depending on the available personnel within the organization. A major functional element is the weighted labor matrix for each activity. The information for this matrix is provided by analysis of each organization based on its own history and practices. From this combination, a weighted labor rate is computed. This weighted rate combined with other elements from the schedules forms the final cost recovery rate.

#### Summary of Cost Recovery Rates

Cost recovery rates are computed for each of a number of identified activities in the consolidated materials organization. Some of these activities are performed both in Headquarters and the Regions, some only occur in one area or another.

There is a summary of the numerical designations of the various activities and the work involved for reference at the end of this section. Regardless of location, the basic structure is comprised of the weighted labor rate for the activity together with the appropriate overhead and/or equipment cost factors. *Three elements are common to all rates: the weighted labor cost, the non-chargeable labor cost, and the non-labor overhead cost.*

The weighted labor cost for each activity is determined by a labor rate matrix combining the staff level and classes used for that activity, wherever it is performed. This labor cost is unique for each activity, even though it may vary by only a minor amount from another activity. The non-chargeable labor cost is the same for all activities and is itself, derived from a labor rate matrix combining all the overhead personnel for the materials organization. The

non-labor overhead is also the same for all activities and is based on the computed overhead items other than labor which support the total Materials organization. In compiling the various cost recovery rates, the first three items, then, are the same throughout:

- Labor Cost
- Non-chargeable Labor Costs (Schedule 1)
- Non-labor Overhead Cost ( Schedule 2)

A significant number of the cost recovery rates are comprised of only these three elements. The actual rates, however, vary because the labor rate matrix which determines the labor cost is specific for each category of service provided.

The cost recovery rates which contain only these three elements shown in the table below:

### **Rates Comprised Solely Of Direct and Indirect Labor and Overhead**

<b>Rate Code</b>	<b>Service Provided and Additive</b>
R-1	Laboratory Testing
R-2	Drafting and Data Analysis (including GIS)
R-3	Analysis, Reporting and Review
R-5	Materials Inspection, Region
R-6R	Prestress Inspection, Region
R-6	Prestress Inspection, Service Center, No Travel
R-7	Assurance Sampling and Inspection
R-8	Plant Inspection, Production, PCC & ACP
R-8P	Plant Inspection, Preliminary, PCC & ACP
R-9	Equipment Inventory and Repair
R-10	Geotechnical Fieldwork
R-11	Field Investigation (without Equipment)
R-12	Membrane Resistivity, Soil pH & Resistivity
R-16	Traffic control
R-21	Geotechnical and Engineering Review
R-26	Pavement Rating

A second group of rates is developed by combining additional factors from the cost schedules to account for the specific equipment used, and for specific travel costs associated with the category of service provided. Since the development uses the same initial three factors, only the additional cost schedules involved are listed.

These rates and their various components are as follows:

### **Rates Which Include a Direct Charge for Travel and/or Equipment**

<b>Rate Code</b>	<b>Service Provided and Additive</b>
R-1	Laboratory Testing, HQ and Region, Equipment Cost (Schedule 18)
R-4	Materials Inspection, HQ, No Travel Vehicle Assigned Cost (Schedule 6)
R-4T	Materials Inspection, HQ with Travel Subsistence and Lodging (Schedule 4) Vehicle Assigned Cost (Schedule 6)
R-5T	Materials Inspection, Region with Travel Subsistence and Lodging (Schedule 4)
R-6T	Prestress Inspection, HQ, In-State Travel Subsistence and Lodging (Schedule 4) Vehicle Assigned Cost (Schedule 6)
R-6RT	Prestress Inspection, Region with Travel Subsistence and Lodging (Schedule 4)
R-6CSL	Crosshole Sonic Testing Vehicle Assigned Cost (Schedule 6) Equipment Cost (Schedule 15)
R-6CSLT	Crosshole Sonic Testing with travel Subsistence and Lodging (Schedule 4) Vehicle Assigned Cost (Schedule 6) Equipment Cost (Schedule 15)
R-8NWR	Plant Inspection with trailer, one operator Cost for Plant Inspection, NWR (Schedule 17)
R-8NWR2	Plant Inspection with trailer, two operators Cost for Plant Inspection, NWR (Schedule 17)
R-15P(1)	Pavement Coring, Single Operator Drill (Schedule 10)
R-15P(2)	Pavement Coring, Two Operators Core Drill (Schedule 10)
R-17P(1)	Pavement Roughness Testing, Profilometer, Single Operator Equipment Operated Cost (Schedule 12)
R-17NTP(1)	Pavement Roughness Testing, Profilometer Operator, No Travel Operated Cost (Schedule 12)
R-17P(2)	Pavement Roughness Testing, Profilometer, Double Operator Subsistence and Lodging (Schedule 4) Equipment Operated Cost (Schedule 12)
R-17NTP(2)	Pavement Roughness Testing, Profilometer, Double Operator, No Travel Equipment Operated Cost (Schedule 12)
R-18	Pavement Friction Testing Subsistence and Lodging (Schedule 4) Equipment Operated Cost (Schedule 14)
R-18NT	Pavement Friction Testing, No Travel Equipment Operated Cost (Schedule 14)
R-18SONT	Pavement Friction Testing, Single Operator, No travel Equipment Operated Cost (Schedule 14)
R-18WT	Pavement Friction Testing, Single Operator, Travel Subsistence and Lodging (Schedule 4) Equipment Operated Cost (Schedule 14)
R-20	Deflection Testing Subsistence and Lodging (Schedule 4) Equipment Operated Cost (Schedule 13)
R-20NT	Deflection Testing Equipment Operated Cost (Schedule 13)

The third group of rates is the R-23 series used for drilling activities. The series combines the use of equipment in various configurations, both with and without travel (subsistence and lodging). Travel costs for drilling services are calculated using a 4-day, 10-hour work week (schedule 4b).



## Summary of Labor Activities Associated With Individual Rates

R-1	Lab Testing - Sample determinations made in Region or Headquarters Lab. Performed by regular testing personnel including section head and supervisor. May include sample tests performed by progress sampler or Region Fabrication Inspector where no test report is issued.
R-2	Drafting and Data Analysis - Preparation of graphic material or computation of numerical data directly performed by the individual to include lab supervisors or lab technicians or drafters.
R-3	Analysis, Reporting and Review - Engineering analysis and review including preparation of engineering and Geotechnical reports, review of engineering plans and specifications, interpreting and analyzing field data. Performed generally by engineering personnel, section heads supervisors, Materials Engineer, and their principal assistants. May involve either office or field work and includes preparation and presentation of training. Also includes acceptance certification and review and Materials Engineer's and Section Head's activities in directing and performing field tests and studies.
R-4	Materials Inspection (Headquarters) No Travel - In plant or onsite inspection of fabricated materials by personnel of the Service Center inspection organization. Made within the local area not requiring overnight travel.
R-4T	Materials Inspection (Headquarters) Travel - Inspection as for rate R-4 but involving reimbursed overnight travel either in-state or out-of -state.
R-5	Materials Inspection (Region) - Inspection of Materials for acceptance by the Region Fabrication Inspector. Typically involves in-plant pre-cast or warehouse sampling.
R-5T	Materials Inspection (Region), Travel - Inspection as for rate R-5 but involving reimbursed overnight travel.
R-6R	Prestress Inspection- Inspection of pre-stressed concrete products during fabrication. Performed by an inspector assigned to a Region Materials Organization.
R-6RT	Prestress Inspection, Travel- Inspection as for rate R-6 but involving reimbursed overnight travel.
R-6	Prestress Inspection (Headquarters) No Travel - Inspection of pre-stressed concrete products by the staff of the HQ Fabrication Inspection section within the permanent duty station area.
R-6T	Prestress Inspection with Travel - As above but on travel status.
R-6CSL	Crosshole Sonic Logging - Inspection with CSL equipment of concrete poured shafts.
R-6CSLT	Crosshole Sonic Logging with Travel - As above but on travel status.
R-7	Independent Assurance Inspection and Sampling - Activities of the Region Independent Assurance Inspector and assistants in conducting the independent assurance sampling and inspection duties set forth by the Construction Manual.
R-8	Plant Inspection, Production PCC and ACP - Inspection at an asphalt or concrete plant for work assigned to a specific contract. This type work would replace an inspection directly responsible to a specific project engineer.
R-8P	Plant Inspection, Preliminary PCC and ACP - Inspection of a Concrete or asphalt plant for qualification of the facility for acceptance for state work. Does not involve sampling and testing of materials during production.
R-8NWR	Plant Inspection with Trailer, one operator-Provide acceptance for HMA at paver's asphalt plant with one tester.
R-8NWR2	Plant Inspection with Trailer, two operators - Same as above except with two testers.

R-9	Equipment Maintenance and Repair - Self-explanatory, may be chargeable directly to a construction project in the case of excessive or unusual damage or calibration. May also be chargeable to TEF through a specific equipment number with concurrence from Equipment Supt. Lab Testing equipment excluded.
R-10	Geotechnical Fieldwork - Field reading observation or test of a Geotechnical nature made by Technical level personnel.
R-11	Field Soils Investigation without Equipment - Inspection, evaluation and/or hand sampling for a soils or pavement investigation by technician personnel.
R-12	Membrane Resistivity, Soil pH, Soil Resistivity - Self-explanatory.
R-15P(1)	Pavement Coring, Single Operator - Inspection, evaluation and sampling requiring core drilling to obtain samples and/or data.
R-15P(2)	Pavement Coring , Two Operators – Same as above except with two operators.
R-16	Traffic Control - Flagging and sign erection connected with other activities such as chloride sampling, pavement coring, drilling, or FWD operation.
R-17P2	Pavement Roughness Testing, Video/Profiler(Double Operator) - Performed by Headquarters Pavement section using the video/ profiler unit either pre-and post-construction or statewide inventory.
R-17P2NT	Pavement Roughness Testing, Video/Profiler (Double Operator) No Travel - Same as above except no travel.
R-17P1	Pavement Roughness Testing Video/Profiler(Single Operator ) - Same as above
R-17P1NT	Pavement Roughness Testing, Video/Profiler, (Single Operator.) No Travel - Same as above except no travel.
R-18WT	Pavement Friction Testing - Operation of friction test vehicle by HQ Pavement section either pre - and post- construction or statewide inventory.
R18NT	Pavement Friction Testing, No, Travel – Same as above except no travel.
R-18SOWT	Pavement Friction Testing, Single Operator, with Travel – Same as above except with single operator.
R-18SONT	Pavement Friction Testing, Single Operator, No Travel – Same as above but no travel.
R-20	Deflection Testing - Pavement investigation using a Falling Weight Deflectometer (FWD).
R-20NT	Deflection Testing, No Travel – Same as above except no travel.
R-21	Geotechnical and Engineering Review - Technical evaluation and study by the Region Materials Engineer and Assistant involving complex study and technical details.
R-23	Drilling and Exploration Rates - Varies according to the combination of, series personnel, and travel status.
R-26	Pavement Rating – Rating the condition of the pavement surface from digital images from the Pavement Condition Collection Van.

## Section 4

### Schedule of Proposed Rates

#### Materials Laboratory

In the schedule below, significant changes are explained in the far right column. The most common drivers that affect *individual rates* are changes in TEF equipment rates, equipment utilization rates, and in the mix of classifications for individuals performing the work. Factors that affect *all rates* include significant increases or decreases in expenditures and/or changes in demand for services which in turn affects recoveries.

#### Proposed 2014 Rate Schedule

Activity	Rate Derivation	FY 13 Jan-Jun		FY 14		% Change		Key Drivers for Increase/Decrease Exceeding 5%
		Reg	OT	Reg	OT	Rate	OT Rate	
Lab Testing	R-1	99.10	110.54	106.78	119.15	8%	8%	Direct charging lab equip. beg. FY14
Geotechnical Fieldwork	R-10	102.90	116.43	94.22	108.69	-8%	-7%	\$5/hr drop in indirect
Field Soils Investigation w/o Equip	R-11	106.78	119.04	98.30	108.71	-8%	-9%	\$5/hr drop in indirect
Soil ph & Resis	R-12	111.42	129.71	96.79	112.50	-13%	-13%	\$5/hr drop in indirect, Equip rate down
Pavement Coring, Single Operator	R-15P1	166.43	179.81	133.10	147.74	-20%	-18%	\$5/hr drop in indirect, Equip rate down
Pavement Coring, Two Operators	R-15P2	144.67	158.05	113.86	128.50	-21%	-19%	\$5/hr drop in indirect, Equip rate down
Traffic Control	R-16	96.42	107.46	88.83	100.63	-8%	-6%	\$5/hr drop in indirect
Pavement Roughness Testing	R-17P1	279.77	293.49	294.25	306.51	5%	4%	\$5/hr drop in lab OH, Equip rate up
Pavement Roughness Testing, No Travel	R-17P1NT	266.80	280.53	282.03	294.28	6%	5%	\$5/hr drop in lab OH, Equip rate up
Pavement Roughness Testing, Two Operators	R-17P2	197.30	211.02	198.09	210.35	0%	0%	\$5/hr drop in lab OH, Equip rate up
Pavement Roughness Testing, Two Operators, No Travel	R-17P2NT	184.33	198.06	185.87	198.12	1%	0%	\$5/hr drop in lab OH, Equip rate up
Pavement Friction Testing, Two Operators, with Travel	R-18	144.96	157.00	118.41	128.54	-18%	-18%	\$5/hr drop in lab OH, Equip rate down
Pavement Friction Testing, Two Operators, No Travel	R-18NT	132.00	144.04	106.18	116.31	-20%	-19%	\$5/hr drop in lab OH, Equip rate down
Pavement Friction Testing, Single Operator, No Travel	R-18SONT	165.56	177.60	126.99	137.12	-23%	-23%	\$5/hr drop in lab OH, Equip rate down
Pavement Friction Testing, Single Operator, with Travel	R-18SOWT	178.53	190.57	139.21	149.34	-22%	-22%	\$5/hr drop in lab OH, Equip rate down
Drafting and Data Analysis	R-2	102.45	116.45	92.39	105.93	-10%	-9%	\$5/hr drop in indirect
Deflection Testing	R-20	178.97	197.27	166.45	185.05	-7%	-6%	\$5/hr drop in indirect
Deflection Testing, No Travel	R-20NT	166.01	184.30	154.23	172.83	-7%	-6%	\$5/hr drop in indirect
Geotechnical & Engineering Review	R-21	116.70	116.70	109.97	111.10	-6%	-5%	\$5/hr drop in indirect
Pavement Rating	R-26	97.81	109.53	87.83	99.17	-10%	-9%	\$5/hr drop in indirect
Analysis, Reporting, and Review	R-3	113.91	122.68	107.36	116.63	-6%	-5%	\$5/hr drop in indirect
Analysis, Reporting, and Review	R-3/2	56.95	61.34	53.68	58.31	-6%	-5%	\$5/hr drop in indirect
Analysis, Reporting, and Review	R-3NB	42.36	42.36	41.13	41.13	-3%	-3%	\$5/hr drop in indirect
Analysis, Reporting, and Review	R-3NW	50.99	50.99	49.68	49.68	-3%	-3%	\$5/hr drop in indirect
Analysis, Reporting, and Review	R-3X2	227.82	245.37	214.73	233.26	-6%	-5%	\$5/hr drop in indirect
Analysis, Reporting, and Review	R-3X5	569.55	613.43	536.82	583.15	-6%	-5%	\$5/hr drop in indirect
Materials Inspection, HQ, No Travel	R-4	115.03	122.86	106.62	114.66	-7%	-7%	\$5/hr drop in indirect
Materials Inspection, HQ, w/Travel	R-4T	127.98	135.83	118.85	126.89	-7%	-7%	\$5/hr drop in indirect
Materials Inspection, Region	R-5	109.25	126.51	101.43	119.05	-7%	-6%	\$5/hr drop in indirect
Materials Inspection, Region W/travel	R-5T	122.21	139.46	113.65	131.28	-7%	-6%	\$5/hr drop in indirect
Prestress Inspection, HQ, No Travel	R-6	103.57	118.12	96.09	111.38	-7%	-6%	\$5/hr drop in indirect
Crosshole Sonic Testing	R-6CSL	124.61	138.56	110.33	124.94	-11%	-10%	\$5/hr drop in indirect, Equip rate down
Crosshole Sonic Testing with travel	R-6CSLT	137.57	151.52	122.56	137.17	-11%	-9%	\$5/hr drop in indirect, Equip rate down
Prestress Insp., HQ, In-State Travel	R-6T	116.53	131.08	108.31	123.61	-7%	-6%	\$5/hr drop in indirect
Assurance Inspection and Sampling	R-7	105.30	120.71	98.26	114.67	-7%	-5%	\$5/hr drop in indirect
Plant Inspection, Production	R-8	101.47	115.01	96.58	112.21	-5%	-2%	\$5/hr drop in indirect
Plant Insp w/trailer, one operator	R-8NW	158.45	170.64	147.75	160.85	-7%	-6%	\$5/hr drop in indirect
Plant Insp w/trailer, two operators	R-8NW2	128.60	140.79	119.59	132.69	-7%	-6%	\$5/hr drop in indirect
Plant Insp., Preliminary, PCC & ACP	R-8P	102.32	116.27	98.77	115.46	-3%	-1%	\$5/hr drop in indirect
Equipment Inventory and Repair	R-9	101.55	115.12	93.71	107.92	-8%	-6%	\$5/hr drop in indirect



## Section 5

### Total Revenues to Allowable Costs Analysis

#### Materials Laboratory

#### Workload Projection Assumptions

Although the materials lab workload correlates strongly with the I & P programs, in any given year independent variables with the potential to influence workload may exist. Modest declines are expected in the Geotechnical Division where the preponderance of their work, Drilling and Foundation Engineering, occurs earlier in the project life cycle. Geotechnical also received a 20% reduction to its FY 13-15 Unstable Slopes Program Support budget. Construction Materials Division anticipates a moderate decline demand for testing services in FY 14 and Pavements Division received a 20% reduction in its budget for the Pavement Management program.

#### Workload Assumptions (Direct Charged FTEs)

	2013 Allocations	2013 Actuals	2014 Allocation	Delta	% Delta
State Material Lab					
Construction Materials	44.0	40.5	38.5	-5	-12%
Geotechnical	36.2	39.2	37.3	1	3%
Pavements	6.7	7.2	6.9	0	3%
Subtotal	86.9	86.9	82.7	-4	-5%
Region Labs	31.7	27.8	26.5	-5	-17%
Total	118.6	114.7	109.2	-9	-8%

Note: FY13 baseline data from CY12 due to FHWA plan submission deadline requirements

#### Workload Assumptions (Hours by Program)

By Program	% Total	CY12 Hours	% Total	FY14 Est Hours	% Change	Delta Hours
I	57%	121,008	56%	109,452	-1%	-11,555
P	32%	67,934	33%	64,499	1%	-3,435
Local	7%	14,861	8%	15,636	1%	775
Other	3%	6,028	3%	5,864	0%	-164
Total		212,294		195,451		-16,843

## Summary of Planned Expenditures

In 2013, approximately 81% of Mats Lab expenditures were for labor. Equipment and Travel were 12% and 2% respectively. All other categories of expenditures constitute the remaining 5%.

### Labor

According to workload estimates, we expect to spend \$191K less for Direct Labor, \$142K more for Indirect Labor \$48K less overall. The increases in labor costs are primarily due to termination of the TSRA. Total FTEs, which includes non-perm labor and overtime, are expected to be down by approximately 7% for FY 2014, reflecting the decline in demand for services.

Labor Expenditures						
	2013 Allocations	2013 Actuals	2014 Allocation	Delta	% Delta	
Hours						
Direct	212,294	205,260	195,451	-16,843	-8%	Decline in I-Program, Program Support Cuts
Indirect	130,670	130,349	125,174	-5,496	-4%	
Total	342,964	335,609	320,625	-22,339	-7%	FTE reductions
FTEs						
Direct	118.6	114.7	109.2	-9	-8%	
Indirect	73.0	72.8	69.9	-3	-4%	
Total	191.6	187.5	179.1	-12	-7%	Decline in I-Program, Program Support Cuts
Average Cost Rate						
Hourly	\$ 49.99	\$ 51.27	\$ 53.32	\$ 3.33	7%	Cost rate 4% --TSRA 3%
Annual Expenditure						
Direct	10,611,695	10,523,054	10,420,973	-190,722	-2%	Decline in I-Program, Program Support Cuts
Indirect	6,531,650	6,682,587	6,673,981	142,330	2%	
Total	17,143,345	17,205,640	17,094,953	-48,392	0%	

*Note: FY13 baseline data from CY12 due to FHWA plan submission deadline requirements*

### Distribution of FTES

Region	Region	Region	Region	HQ	HQ	HQ	Total	Total	Total
FTes	FTes	OH	Direct	FTes	OH	Direct	FTes	OH	Direct
Initial Estimate	50.7	23.8	26.9	128.5	51.8	76.6	179.1	75.6	103.5
Bias Correction	0	0	0	0	-5.7	5.7	0	-5.7	5.7
Adjusted Estimate	50.7	23.8	26.9	128.5	46.1	82.3	179.1	69.9	109.2

The FTE breakdown was summarized using the Labor Rate Analysis forms submitted by the Regions and HQ Sections in March, 2013. Data is displayed by Region and HQ for total, Non-chargeable, and Direct-charge FTE's.

Total FTEs engaged in production work which includes testing, analysis, reporting, review, drafting, data analysis, source approval, materials inspection, and test drilling is 109. Note that our correction for conservative bias in the estimates effectively moves 5.7 FTEs at the State Lab from "Overhead" to "Direct Charge" status.

### Indirect Labor Activities within the Materials Labs

Non-chargeable Labor, AKA Overhead and Indirect Labor constitutes about 40% of the lab's total labor charges. While some of this work is administrative, the vast majority is not. It is work that is mission related, necessary &

expected but work for which there is no work order to charge. We have identified six broad categories for these non-chargeable activities: Administrative, Research, Policy, Project Support, Unfunded Mandates & Materials Lab Support.

Examples shown are representative but not exhaustive.

**Administrative:** This is work that is necessary but not directly related to the execution of the Materials Lab mission. A few representative examples include:

Administrative e-mail & phone calls	Grounds Maintenance	Performance appraisals
Budget activities	IT support (General)	Personnel Activities
Building maint./repair/remodel	OEO/Ethics/Info security training	Purchasing
Discipline/Counseling	Office safety meetings	Vehicle care & maintenance
Fiscal activities	Payroll	

**Research & Technology Implementation:** This is investigation into & study of materials, sources & processes to establish facts & reach new conclusions which promote quality & safety & reduce life cycle costs. Examples include:

Advanced Pavement Technology Program	NW States Pavement Management Meetings	Strategic directions development & implementation
Chip Seal Summits	Quieter Pavements	WSDOT Research Projects
WSDOT Research Projects NCHRP Panels	Research support (e.g. TRB) SHRP 2	

**Policy:** This is work to develop & publish information & guidance needed to perform job functions & guidance to external entities such as local agencies, contractors, & consultants. Examples include:

AASHTO, WAQTC, ASTM, APWA, ADSC, PDCA, AMSE, NCMA, BST summit activities & interactions	Pavement Policy Update Procedural & process reviews (ETG meetings)	AASHTO & ASTM Ballot Reviews Research policy related concerns
Design/Construction Policy (manuals, spec's, interpretation, etc.)	Develop Standard Specs & GSP's P1 Task Force	Task group activities (ACPA, WACA, NWACPA, WSDOT) WSDOT Manual Updates

**Project Support:** This is work that benefits projects either directly or indirectly but work for which it is impractical or impossible to charge. Examples include: Annual Prestress/Precast Plant Approvals

Consultant Contract Admin	Paving recommendations to scoping projects with no work order	Review: developer agreements that have no JB agreement
Evaluating roadway conditions, scoping, van tour, etc. (no budget)	Phone calls, e-mails, & short meetings –project related but generally too brief to track	Review: Request for Proposals for Design Build
Initial, project related site assessments prior to establishment of a charge code	Project planning, development, scheduling & management	Review: road conditions for program priorities
Meetings - project related	QPL review & updating	Unstable Slopes – field & office management (no budget)

**Unfunded Mandates:** This is mission-related work that is necessary & sanctioned by the Department but work for which there is no work order to charge.

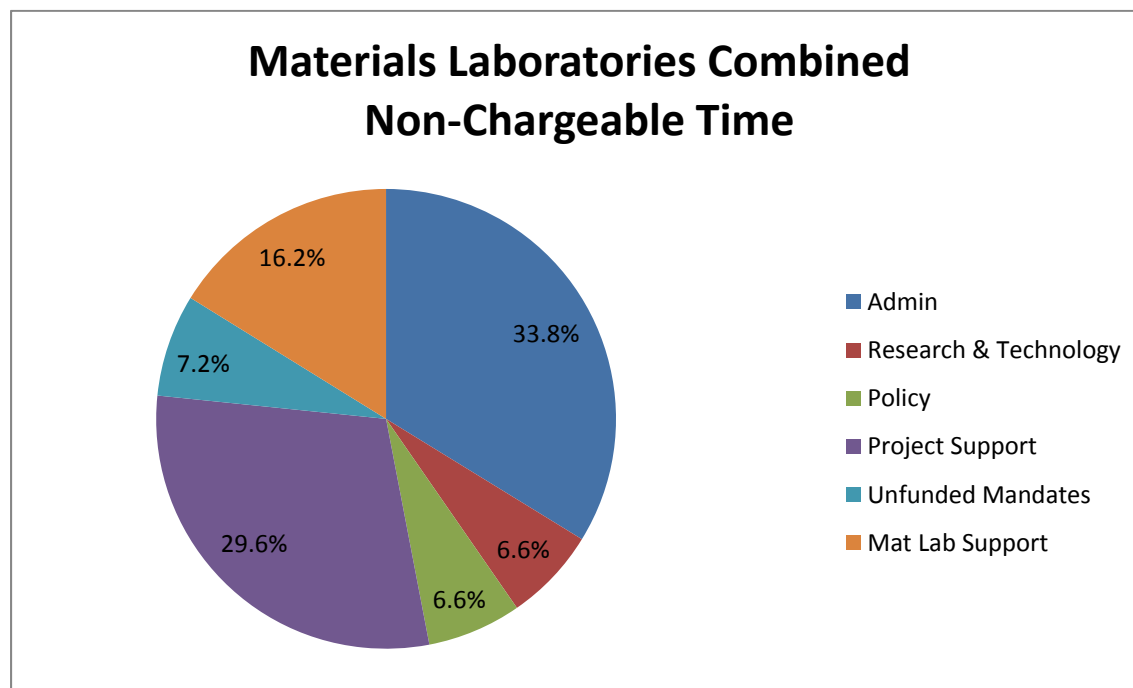
Examples Include:

Yearly CE Cost Reduction Evaluations	CPDM	Upper management support, reporting & communication
Assistance to Maintenance Division	HQ Communications Office	Legislature related
Construction Office Issues	Review of road conditions for maintenance	Laboratory Tours

**Materials Lab Support:** This is work necessary to maintain the personnel & equipment & perform logistics that tie directly to the material lab mission. Examples include:

AASHTO Accreditation & Training Activities	Laboratory Testing Equipment Verifications/Calibrations	Tester qualifications administration and maintenance
CCRL & AMRL proficiency sample testing	MATS & CATS training development and delivery	MATS development & troubleshooting
Equipment cleaning, maintenance and repair	Qualified tester reports with written test rewrites	Lab equipment & supply orderin

The chart below shows the approximate percentage of total available indirect time spent by ALL staff at ALL SEVEN LABS in each of these six categories. Note that pure Admin work constitutes only about a third of the total. The next largest category is project support at approximately 30%. About 16% is spent taking care of the labs, equipment, tester qualifications, etc.





## Non Labor

Non Labor expenditures are expected to decrease approximately \$457K in FY 2014 from the FY 2013 allocation.

Non Labor Expenditures						
	2013 Allocations	2013 Actuals	2014 Allocation	Delta	% Delta	Comment
Non-Labor Direct						
Equipment	1,255,140	846,602	1,643,359	388,219	31%	Lab equipment direct charged eff FY14
Travel	589,335	429,506	444,167	-145,168	-25%	Decreased travel for drill crews.
Subtotal	1,844,475	1,276,108	2,087,526	243,051	13%	Increase in non-labor direct
Non-Labor Indirect						
Recurring	2,764,760	2,921,780	2,138,589	-626,171	-23%	
Non Recurring	79,893	31,811	6,100	-73,793		Lab equipment out of OH effective FY14
Subtotal	2,844,653	2,953,591	2,144,689	-699,963	-25%	Decrease in non-labor indirect
Total	4,689,128	4,229,699	4,232,215	-456,912	-10%	Overall decrease in Non Labor Expenses

*Note: FY13 baseline data from CY12 due to FHWA plan submission deadline requirements*

### Line Item Adjustments in the Non-Labor Expenditures

We backed out approximately (\$31K) from our 2013 baseline in non-recurring expenditures and an additional (\$788K) for FY14. The most significant change for FY14 is moving the lab equipment lease costs from overhead to a direct charge for laboratory testing. This strategy combined with other targeted reductions to indirect costs, will result in testing rate increases of about 8% but an average rate decrease of about 3% overall.

### Non-Recurring Expenditures

Line Items Backed Out for 2013	Line Items Added for 2014	Amount	Obj Code
Phase 2 Renovation Project : Supplies & Materials		(7,935)	EA
Hazmat Consultant Payment		(5,490)	ER
Phase 2 Renovation Project : Architect		(15,287)	JK
Phase 2 Renovation Project : Purchased Services		(3,099)	ER
	FY13 TOTAL	(31,811)	
	Phase 2 Renovation Project : Supplies & Materials	2,750	EA
	Reduction in utilities: cost sharing w/ surveyors	(13,996)	EC
	Lab Equipment Reduction Effort	(52,500)	EH
	Laboratory Equipment Moved from Overhead to Direct	(702,819)	EH
	Insurance Upgrade - Replacement Value on Profilometers	5,478	EP
	Online ASHTO/ASTM Specification Charges	(53,333)	ER
	Phase 2 Renovation Project : Contractor Fire Safety Improvements	21,000	ER
	Phase 2 Renovation Project : Fire Safety Upgrade	5,800	EZ
	Reduce Scanners	(6,131)	JA
	Acid Cabinets for Chemical Lab	6,100	JA
	FY14 TOTAL	(787,652)	
		\$ (819,463)	

The Mats Lab's proposed FY 2014 budget is \$21.3 million: down \$500K from the \$21.8 million authorized for FY 2013.

### Proposed FY 2014 Budget

Obj Code	Description	Direct	Indirect	Total
BE	Allowances		6,233	6,233
EA	Supplies and Materials		354,478	354,478
EB	Communications		92,149	92,149
EC	Utilities		186,260	186,260
EE	Repairs, Alterations and Maintenance		14,472	14,472
EF	Printing Services		2,432	2,432
EG	Employee Prof Development & Training		43,610	43,610
EH	Rents, Leases, Furn, Equip, & Software	1,545,659	843,566	2,389,225
EJ	Subscriptions		1,170	1,170
EP	Insurance		21,259	21,259
ER	Purchased Services		147,233	147,233
ES	Vehicle Maint & Operating Costs		10,627	10,627
EY	Software Maint & Leases		131,484	131,484
EZ	Other Goods and Services		25,131	25,131
GA	In-State Subsistence and Lodging	353,387	60,963	414,350
GB	In-State Air Transportation		2,884	2,884
GC	Private Automobile Mileage		3,662	3,662
GD	Other Travel Expenses		19,386	19,386
GF	Out-of-State Subsistence and Lodging	90,780	623	91,403
GG	Out-of State Air Transportation		1,562	1,562
GN	Motor Pool Services	97,700	90,987	188,687
JA	Non Capitalized Assets		67,601	67,601
JB	Minor Cap IT		436	436
JC	Furnishings, Equipment and Software		8,936	8,936
JG	Highway Construction		6	6
TA10	Wages-Overtime	475,955		475,955
TA11	Wages-Regular	9,933,211	6,682,587	16,615,798
TA13	Wages-Penalty	3,201		3,201
TE76	Goods and Services		7,539	7,539
<b>TOTAL</b>		<b>\$ 12,499,893</b>	<b>\$ 8,827,276</b>	<b>\$ 21,327,170</b>

## Summary of Cost Billed

### Comparison with Prior Year

We expect the costs billed to track along fairly closely with the demand for services.

### Recoveries by Revenue Center

#### Summary of Costs Billed

	2013 Allocations	2013 Actuals	2014 Allocation	Delta	% Delta	Comment
State Material Lab						
Construction Materials	\$8,103,948	\$7,564,087	\$7,689,843	-414,106	-5%	Decline in lab testing
Geotechnical	\$6,660,214	\$7,324,733	\$6,833,495	173,281	3%	
Pavements	\$1,232,250	\$1,349,656	\$1,495,572	263,323	21%	Increases in Pavement Design
Subtotal	\$15,996,412	\$16,238,476	\$16,018,910	22,498	0%	
Region Labs	\$5,841,585	\$5,196,864	\$5,133,907	-707,678	-12%	Decline in region labs
Total	\$21,832,473	\$21,435,339	\$21,327,169	-505,304	-2%	

*Note: FY13 baseline data from CY12 due to FHWA plan submission deadline requirements*

### Cost Billed by Customer

#### Workload Assumptions (Dollars by Program)

By Program	% Total	CY12 Expenditure	% Total	FY14 Est Expenditure	% Change	Delta Expenditure
I	57%	\$ 12,218,143	56%	\$ 11,943,214	-2%	-274,929
P	32%	\$ 6,859,309	33%	\$ 7,037,966	3%	178,657
Local	7%	\$ 1,500,474	8%	\$ 1,706,173	14%	205,700
Other	3%	\$ 608,612	3%	\$ 639,815	5%	31,203
Total		\$ 21,435,339		\$ 21,327,169		140,630

## Section 6

### Analysis of Change in Rates from Prior Plan Year

#### *Materials Laboratory*

As stated before, all rates contain three elements: 1) direct labor to cover the employee's time to perform the work, 2) indirect labor to cover a portion of time of employees' who are unable to charge their work to a specific project and 3) indirect non-labor for goods and services not attributable to a specific test or service. The indirect charges, both labor and non-labor are charged evenly to ALL the rates and comprise approximately 23% of the most common hourly rate. Direct labor is also charged to ALL rates however, the amount of direct labor charged to an individual rate varies with the mix of classifications of the employees performing that work. Currently, the direct labor component ranges from \$44.52 to \$77.88 per hour. Individual rates may vary significantly from year to year when the mix of classifications changes for the people performing certain work.

Certain rates have additional charges for equipment (typically rolling stock) and travel. When travel is applied to rates, it is applied uniformly to all the rates which include a travel component. When equipment is applied to rates variability typically exists. Year-to-year variability may be due to varying TEF lease rates OR to changes in the number of hours that a piece of equipment is used, OR both.

### Factors that Affect the Rates

#### Key Drivers to the FY 2014 Rate Changes

There are offsetting pressures on the cost recovery rates, but the combined effect of these six factors is a 2.3% reduction to the FY14 cost recovery rates.

##### Key Drivers on all Rates

Driver	Delta \$\$	% Rate Chg
<b>Negative Drivers (rates up)</b>		
Labor - TSRA	\$514,300	2.3%
Drop in Hours Direct Charged	\$1,936,968	8.6%
Non Labor-Direct	\$243,051	1.1%
<b>Positive Drivers (rates down)</b>		
Labor - FTE Reductions	-\$1,191,073	-5.3%
Recovery Rates - Jan 2013 Rate Increase	-\$1,309,948	-6.0%
Non Labor - Indirect	-\$699,963	-3.1%
<b>Net Drivers</b>	<b>-\$506,665</b>	<b>-2.3%</b>

## Section 7

### Detail Supporting Schedules

#### *Materials Laboratory*

#### Summary of Schedules

Schedule	Description	FY-13 Rates	FY-14 Rates
1.	Non-chargeable Labor Cost	\$36.71	\$ 34.09
2.	Lab Overhead Cost	\$13.76	\$ 10.97
4b.	Per Diem, 4X10 Workweek	\$12.08	\$ 12.23
6.	Equipment Cost, Personnel Carrying Equipment, Materials Inspection	\$4.08	\$ 4.57
8.	Assigned Cost, Drilling Support Equipment	\$2.75	\$ 4.50
10.	Operated Cost Drilling Equipment Composite Rate		
a.	Truck-Mounted Drill	\$21.67	\$ 29.16
b.	Heavy Duty Drill	\$18.13	\$ 21.78
c.	Dutch Cone	\$148.51	\$ 49.95
d.	Skid Drill	\$27.70	\$ 23.36
e.	Skid Drill, Barge (Water Work)	\$29.11	\$ 24.88
g1.	Standard Core Drill, Single Operator	\$41.05	\$ 38.48
g2.	Standard Core Drill, Two Operators	\$20.52	\$ 19.24
12p1.	Pavement Roughness Measurement, Profilometer, Single Operator	\$155.60	\$ 192.31
12p2.	Pavement Roughness Measurement, Profilometer, Two Operators	\$77.80	\$ 96.16
13.	Operated Cost, Deflectometer Vehicle	\$51.50	\$ 50.50
14a.	Operated Cost Skid Test Truck & Trailer, Single Operator	\$63.33	\$ 41.61
14b.	Operated Cost Skid Test Truck & Trailer, Dual Operator	\$31.66	\$ 20.80
15.	Crosshole Sonic Logging	\$12.91	\$ 11.26
17a.	Plant Inspection, NWR, Single Operator	\$46.76	\$ 56.33
17b.	Plant Inspection, NWR, Dual Operator	\$22.72	\$ 28.16
18	Laboratory Equipment	N/A	\$ 14.84

## Equipment Rate Summary

Rates shown are Assigned rates unless equipment is charged for both Assigned and Operated, then both rates are shown and labeled.

Class	Description	FY 2013	FY 2014
01 C 10	Caravan	\$ 2.74	\$ 2.78
01 C 30	Escape	\$ 3.37	\$ 3.57
05 C 11	Colorado	\$ 3.52	\$ 3.78
02 C 04	Express	\$ 4.45	\$ 4.60
02 C 40	Van w/Road Profilometer	\$ 54.46	\$ 67.31
05 C 08	F250 4x4	\$ 6.14	\$ 7.44
05 C 08	F350 4x4	\$ 6.14	\$ 7.44
05 C 11	Colorado	\$ 3.52	\$ 3.78
05 C 20	F150 4x4	\$ 4.45	\$ 4.75
05 C 32	2500 Quadcab	\$ 5.28	\$ 5.44
8-1	Truck and Trailer; Skid Tester	\$ 31.63	\$ 20.80
8-23	Truck; Flatbed; Single Axle, without Crane	\$ 7.20	\$ 7.50
8-25	Truck, Flatbed; Tandem Axle, with Crane (currently d-final status)	\$ 5.00	\$ 5.47
8-53	Boom Truck	\$ 11.67	\$ 13.45
9-1	Truck, w/Earth Drilling Unit	\$ 21.10	\$ 22.30
9-2	Drill Unit; Track Mounted	\$ 24.13	\$ 23.52
9-3	Drill Unit, Trailer Mounted	\$ 4.31	\$ 4.04
9-4	Drill Unit; Skid Mounted	\$ 11.28	\$ 10.32
9-7	Drill Unit; Track Mounted	\$ 19.92	\$ 21.27
9-22	Truck; Drill Unit Support	\$ 10.33	\$ 12.18
9-26	Boom Truck	\$ 24.64	\$ 14.27
9-30	Truck; Electronic Cone Penetrometer,	\$ 10.99	\$ 9.99
10-5	Tilt Trailer, 2 Axle, 40,000 Lbs	\$ 1.79	\$ 1.65
10-12	Tilt Trailer, 2 Axle, 24,000 Lbs	\$ 1.02	\$ 1.65
10-14	Utility Trailer, 3,000 GVW	\$ 0.53	\$ 1.44
20-11	Outboard Boat,	\$ 2.70	\$ 2.21
20-13	Barge Drill w/Pusher Skiff	\$ 3.86	\$ 2.01
21-26	Deflectometer, Trailer Mounted (currently in d-final status)	\$ 1.03	\$ 1.01

## Schedule 1: Non-Chargeable Labor Costs

Class Code	CLASS	RANGE	SALARY Step L	ESTIMATED SALARY Step L	COST RATE REG	COST RATE OT	Bias-Adj Non Chargeable	Bias-Adj Chargeable	Bias-Adj Non Chargeable
							FTEs	Extension	Extension
	WMS4 SME	WMS4	10,080	10,382	93.63	93.63	0.0	0.0	0.00
	WMS3 RME-NW	WMS3	8,179	8,424	77.88	77.88	1.2	0.4	93.63
	WMS2 RME-Other	WMS2	7,259	7,477	69.93	69.93	2.3	1.7	162.96
	WMS4 AME-SML	WMS4	8,945	9,213	84.33	84.33	1.8	1.1	155.19
	WMS2 AME-Rgn	WMS2	6,839	7,044	66.32	66.32	0.7	0.3	46.00
	WMS3 SH-WMS3	WMS3	8,682	8,942	82.19	82.19	2.2	2.4	184.69
	WMS2 ASH-WMS2	WMS2	7,583	7,810	72.53	72.53	1.5	0.8	107.32
	5300 TE5/TTE5	69	6,539	6,735	63.50	63.50	6.1	10.1	388.15
	530N TE4	65	5,922	6,100	58.66	77.26	5.9	19.4	343.92
	530M TE3	61	5,369	5,530	53.70	70.39	5.4	11.2	289.51
	530L TE2	57	4,860	5,006	49.44	64.05	9.7	22.2	477.77
538T, 530K	TE1/TT3	53	4,406	4,538	45.44	58.08	7.1	21.9	320.62
	538S TT2	48	3,894	4,011	41.14	51.68	4.7	11.1	192.88
	538R TT1	42	3,355	3,456	36.34	44.52	0.2	2.8	8.74
	515S Chem4	66	6,069	6,251	59.70	59.70	0.4	0.7	20.98
	515R Chem3	60	5,233	5,390	52.48	52.48	0.4	0.7	18.44
	515Q Chem 2	54	4,741	4,883	48.29	48.29	0.4	0.7	16.97
	532F EE4	72	7,040	7,251	68.10	68.10	0.6	0.4	40.93
WMS2	Bus Mgr	WMS2	7,404	7,626	71.21	71.21	0.9	0.0	65.85
	100V AA4	46	3,704	3,815	39.19	48.78	0.9	0.0	36.24
	143I FA4	52	4,296	4,425	44.35	44.35	0.9	0.0	41.01
	143L FA1	40	3,194	3,290	34.88	42.36	0.9	0.0	32.26
	100K OAL	33	2,705	2,786	30.73	36.17	0.0	0.0	0.00
	100J OA3	31	2,583	2,660	29.59	34.46	1.5	0.4	43.78
	100I OA2	28	2,520	2,596	29.02	33.61	0.0	0.0	0.00
	100T Sec Sr	33	2,583	2,660	29.59	34.46	3.5	0.0	103.98
	114H PSS4	55	4,860	5,006	49.44	49.44	0.9	0.0	45.72
	114G PSS3	51	4,192	4,318	43.59	55.32	0.9	0.0	40.31
	596I MntSpec5	60	5,233	5,390	52.48	52.48	0.9	0.0	48.53
	626J MntMech1	42	3,355	3,456	36.34	44.52	1.8	0.0	67.21
	262L LAPP4	39	3,276	3,374	35.65	43.50	0.9	0.0	32.97
	261C LAP3	53	4,406	4,538	45.44	45.44	0.6	0.0	25.21
	3286 ITS6	70	6,701	6,902	65.16	65.16	1.0	1.0	63.27
	479M ITS5	66	6,069	6,251	59.70	59.70	1.8	0.0	110.42
	479L ITS4	62	5,498	5,663	54.77	54.77	0.9	0.0	50.65
	479K ITS3	58	4,982	5,131	50.28	50.28	0.9	0.0	46.50
Non-Chargeable Rate: \$					34.09	Totals	69.9	109.2	\$3,722.60

The distribution of the Non-chargeable Labor Rate is made by dividing the combined labor cost extension for Non-chargeable Labor by the total of production FTEs. The 34.09 per hour for indirect labor is down about \$2.00 from FY 2013 levels.

## Calculation

Labor Cost Extension           \$3,723  
Total FTEs Direct Charged   109 = \$34.09 /hour

## Schedule 2: Laboratory Overhead

Materials lab overhead is defined as expenditures, other than labor, that cannot be directly charged to projects. The steps for determining Materials Lab overhead is summarized as follows:

1. Determine expenditures (excluding labor) for the previous fiscal year – this is the “baseline”.
2. Make line item adjustments to the baseline for major differences or changes in expenditures when comparing the baseline to the coming year (e.g. a new project of significant expense such as document imaging).
3. Subtract equipment and travel costs that will be recovered through the rates.
4. Apply an inflation factor to those expenditures that were “carried forward” from the previous fiscal year (i.e. excludes expenditures from step 2 & 3).
5. Add up the total annual overhead (i.e. inflation adjusted expenditures and line items).
6. Divide the total by the number of production FTEs (per schedule 1).
7. Divide the result by number production hours in a year (1,790) to determine the hourly overhead rate.

## FY 2014 Lab Overhead Calculation

Overhead Calculation	
Previous Year Expenditures (Baseline)	4,229,699
Less Equip & Travel Recovered Through Rates	1,290,769
Unadjusted Overhead Costs	2,938,930
Plus/Minus Net Line Item Adjustments:	-819,463
Adjusted Overhead Costs	2,119,467
Inflation (ECRF IPD, 1.19% for 2014)	25,222
Inflation Adjusted Overhead Costs	2,144,689
Divided by Number of Production FTEs	109.2
Overhead Cost per Production FTE	19,642
Divided by Production Hours in Year	1,790
Hourly Lab Overhead Rate	\$10.97



## Schedule 5: Per Diem

### Per Diem for Traveling Crews, (four ten-hour days)

	Breakfast	Lunch	Dinner	Total Subsistence	# Nights	Cost Per Night	Total Lodging	Total	Nightly	Hourly
Monday		18	28	46						
Tue - Wed	15	18	28	122						
Thursday	15	18		33						
				201.00	3.00	96	288	489	163	12.23

## Schedule 6: Materials Inspector Vehicles

Materials and Prestress Inspection Equipment rates have assigned cost for class 1 thru 5. Rate for cost recovery can be obtained by factoring assigned cost against expected work time and weighting based on the units assigned to inspector use.

### Schedule 6, Materials Inspector's Vehicles

Status	Class	Make	Model	No. Rigs FY13	No. Rigs FY14	2013 Rate	2014 Rate	Assigned FY13 Rate	Assigned FY14 Rate	Cost Per Labor Hour
Active	01 C 10	Dodge	Caravan	4	3	2.74	2.78	21,920	16,680	
Active	01 C 30	Ford	Escape	9	9	3.37	3.57	60,660	64,260	
Active	05 C 11	Chev	Colorado	1	1	3.52	3.78	7,040	7,560	
Active	02 C 04	Chev	Express	1	1	4.45	4.60	8,900	9,200	
Total Annual Lease Costs								98,520	97,700	\$ 4.57

## Calculation

Assigned rate x number units x 2,000 hours:

1. Based on 2,000 hr/year/piece equipment.
2. Personnel engaged in materials and pre-stress inspection
3. Number of hours per labor-year.

## Schedule 8: Drill Crew Support Vehicles

### Calculation

Cost per labor hour equals assigned rate x number of units x 2,000 hours, based on 2,000 hour/ year assigned time. Drilling rates calculated on basis of cost recovery for 2-person crew with inspector as separate charge.

1. Based on 2,000 hr/year/piece equipment.
2. Total personnel involved in test drilling (5 crews, driller and helper only, 3 Field Exploration Supervisors)
3. Number of hours per labor-year.

#### Schedule 8, Drill Crew Pickups

Status	Class	Make	Model	No.	2013	2014	Assigned Yearly Rate	FTEs Direct Charged	Cost Per FTE	Cost Per Labor Hour
Active	05 C 08	Ford	F250 4x4	1	6.14	7.44	14,880			
Active	05 C 08	Ford	F350 4x4	5	6.14	7.44	74,400			
Active	05 C 11	Chev	Colorado	1	3.52	3.78	7,560			
Active	05 C 20	Ford	F150 4x4	1	4.45	4.75	9,500			
Active	05 C 32	Dodge	2500 Quadcab	1	5.28	5.44	10,880			
Total Annual Lease Costs					100,180	117,220	117,220	14.56	8,051	\$ 4.50

## Schedule 10: Drilling Equipment Operated and Assigned Cost

Starting in FY06, equipment in TEF was charged only assigned time. This assigned time is based on 2,000 hour in a year. Drilling equipment, other than the Dutch Cone, boat, barge and core drills, is figured at 85% usage.

Dutch Cone (B-61) .....10%  
 Boat, barge and supporting .....25%  
 Core Drills .....11%  
 Truck Mounted Drill (BK-81).....85%  
 Heavy Duty Drills .....85%  
 Skid Drills (09 – 04) .....85%  
 Support Trucks.....85%

The truck and track mounted drills have are used for the most demanding drilling assignments.

10a Truck Mounted Drill	Sub class	Description	2013	2014	Hours of Use	Hourly Cost	# in Crew	Per Hour Charge
Active	9-22	Support Truck	10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
D Final			4.73	5.65	1,000	11.30		
		<b>Roll Up - Supp Trk</b>				<b>13.72</b>		
Active	09-01	<b>CME 55</b>	<b>21.10</b>	<b>22.30</b>	<b>1,000</b>	<b>44.60</b>		
						<b>58.32</b>	<b>2.00</b>	<b>29.16</b>

The track-mounted CME drill (Subclass 9-2) requires a trailer (subclass 10-5). The trailer assigned cost is redistributed to an operated cost as follows:

10b - Heavy Duty Drill	Sub class	Description	2013	2014	Hours of Use	Hourly Cost	# in Crew	Per Hour Charge
Active	9-22	Support Truck	10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
D Final			4.73	5.65	1,000	11.30		
		<b>Roll Up - Supp Trk</b>				<b>13.72</b>		
Active	10-5	Trailer	1.79	1.65	1,700	1.94		
Active	10-5	Trailer	1.79	1.65	1,700	1.94		
Active	10-5	Trailer	1.79	1.65	500	6.60		
Active	10-12'	Trailer	1.26	1.44	1,700	1.69		
		<b>Trailer Roll Up</b>				<b>3.04</b>		
Active	9-2	CME 850	24.13	23.52	1,700	27.67		
	9-2	CME 850	24.13	23.52	1,700	27.67		
	9-7	CME 300	19.92	21.27	1,700	25.02		
		<b>Roll Up CME Drills</b>				<b>26.79</b>		
						<b>43.56</b>	<b>2.00</b>	<b>21.78</b>

In the past, the Dutch Cone was mounted as an accessory on 08L47001, the B-61 truck mounted drill. The new Dutch Cone is a self-contained unit and is only used for Dutch Cone work. Redistribution of the test cone assigned cost is based on 10% usage.

10c - Dutch Cone	Sub class	Description	2013	2014	Hours of Use	Hourly Cost	# in Crew	Per Hour Charge
Active	09-30	Dutch Cone	10.99	9.99	200	99.90		
						99.90	2.00	49.95

While capable of significantly different production rates, the skid drill has costs similar to the truck mounted and heavy drills. It is used in terrain that is not conducive to vehicles with wheels.

10d - Skid Drill	Sub class	Description	2013	2014	Hours of Use	Hourly Cost	# in Crew	Per Hour Charge
Active	9-4	Drill	11.28	10.32	1,700	12.14		
Active			11.28	10.32	1,700	12.14		
Active			11.28	10.32	1,000	20.64		
		<b>Roll Up - Drill</b>				<b>14.97</b>		
Active	9-22	Support Truck	11.28	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
D Final			4.73	5.65	1,000	11.30		
		<b>Roll Up - Supp Trk</b>				<b>13.72</b>		
Active	8-53	Boom Truck	14.07	13.45	1,700	15.82		
Active	9-23	Boom Truck	15.91	14.27	1,700	16.79		
Active	9-23	Boom Truck	15.91	14.27	1,000	28.54		
D Final	8-25	Flatbed truck w knuckle	5.00	5.47	1,000	10.94		
		<b>Roll Up - Boom Trk</b>				<b>18.02</b>		
						46.72	2.00	23.36

Water work activities require auxiliary floating and support equipment in addition to the drill unit. Estimated usage is 500 hours per year. This configuration was used extensively on I 520 and CRC but that work is beginning to subside.

10e - Tripod or Skid Drill, Water Work	Sub class	Description	2013	2014	Hours of Use	Adjusted Rate	# in Crew	Per Hour Charge
Active	9-4	Drill	11.28	10.32	1,700	12.14		
Active			11.28	10.32	1,700	12.14		
Active			11.28	10.32	1,000	20.64		
D Final			-	-	-	-		
		<b>Roll Up - Drill</b>				<b>14.97</b>		
Active	9-22	Support Truck	10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
Active			10.33	12.18	1,700	14.33		
			10.33	12.18	1,700	14.33		
Active								
D Final			4.73	5.65	1,000	11.30		
D Final			-	-	-	-		
	9-22	<b>Roll Up - Supp Trk</b>				<b>13.72</b>		
Active	20-11	Outboard boat	2.70	2.21	500	8.84		
Active	8-23	Flatbed truck w/o crane	7.20	7.50	500	30.00		
Active	25-2	Generator	1.77	2.12	500	8.48		
Active	20-13	Barge, Pontoon	3.86	2.01	500	8.04		
		<b>Roll Up - Water Wrk Eqp</b>						
Active	10-5	Trailer	1.79	1.65	1,700	1.94		
Active	10-5	Trailer	1.79	1.65	1,700	1.94		
Active	10-5	Trailer	1.79	1.65	500	6.60		
Active	10-12'	Trailer	1.26	1.44	1,700	1.69		
		<b>Trailer Roll Up</b>				<b>3.04</b>		
Active	8-53	Boom Truck	14.07	13.45	1,700	15.82		
Active	9-23	Boom Truck	15.91	14.27	1,700	16.79		
Active	9-23	Boom Truck	15.91	14.27	1,000	28.54		
D Final	8-25	Flatbed truck w knuckle	5.00	5.47	1,000	10.94		
						<b>49.76</b>	<b>2.00</b>	<b>24.88</b>

## Schedule 10G: Incidental Drilling - Region Pavement Coring

The class 5 vehicles used to transport the core drills are distributed over the laboratory overhead leaving the recovered cost item to be the core drill itself. Depending on the operation, the core drill can be operated by either a single operator or with two operators.

10g1 - Standard Core Drill	Sub class	Description	2013	2014	Hours of Use	Adjusted Rate	# in Crew	Per Hour Charge
	9-3	Trailer Mounted Drill	4.31	4.04	210	38.48	1.00	
						<b>38.48</b>	<b>1.00</b>	<b>38.48</b>
10g2 - Standard Core Drill	Sub class	Description	2013	2014	Hours of Use	Adjusted Rate	No in Crew	Per Hour Charge
	9-3	Trailer Mounted Drill	4.31	4.04	210	38.48	2.00	
						<b>38.48</b>	<b>2.00</b>	<b>19.24</b>

## Schedule 12: Pavement Roughness Measurement

As with Core Drilling, the Profilometer vehicles can be operated by either one or two operators. These vans are extremely expensive so we have them specially insured at the full replacement cost of \$700K, subject to a \$100K deductible.

Schedule 12 P-1, Pavement Roughness Measurement Profilometer Equipment, Single Operator

Status	Subclass	Description	2013	2014	Estimated Hours of Use	Adjusted Rate	No in Crew	Per Hour Charge
Active	02-40	Profilometer	54.46	67.31	700	192.31	1	192.31
Active	02-40	Profilometer	54.46	67.31	700	192.31	1	192.31
<b>Total Annual Lease Costs</b>			<b>217,840</b>	<b>269,240</b>				<b>192.31</b>

Schedule 12 P-2, Pavement Roughness Measurement Profilometer Equipment, Dual Operator

Status	Subclass	Description	2013	2014	Estimated Hours of Use	Adjusted Rate	No in Crew	Per Hour Charge
Active	02-40	Profilometer	54.46	67.31	700	192.31	2	96.16
Active	02-40	Profilometer	54.46	67.31	700	192.31	2	96.16
<b>Total Annual Lease Costs</b>			<b>217,840</b>	<b>269,240</b>				<b>96.16</b>

## Schedule 13: Falling Weight Deflectometer Vehicle (FWD)

Status	Subclass	Description	2013	2014	Hours of Use	Adjusted Rate	No in Crew	Per Hour Charge
D Final	21-26	FWD	1.03	1.01	40	50.50	1	50.50
<b>Lease Costs</b>			<b>2,060</b>	<b>2,020</b>				<b>50.50</b>

## Schedule 14: Operated Cost Skid Test Truck And Trailer

Status	Subclass	Description	2013	2014	Hours of Use	Adjusted Rate	No in Crew	Per Hour Charge
D Final	08-01	Truck, Skid Test	21.05	15.16	895	33.88	2	16.94
D Final	10-40	Trailer, Skid Test	7.29	3.46	895	7.73	2	3.87
<b>Total Annual Lease Costs</b>			<b>56,680</b>	<b>37,240</b>				<b>20.80</b>

## Schedule 15: Crosshole Sonic Logging System

Status	Subclass	Description	2013	2014	Hours of Use	Adjusted Rate	No in Crew	Per Hour Charge
Active	40-07	SL System	2.26	1.52	270	11.26	1	11.26
Active	40-07	SL System	2.26	1.52	270	11.26	1	11.26
<b>Total Annual Lease Costs</b>			<b>9,040</b>	<b>6,080</b>				<b>11.26</b>

## Schedule 16: NWR Charges for Density Gage Support

### Schedule 16a, Nuclear Gauge Wipe Tests R-3NW (\$839 - Used by NWR)

Subclass	Description	Cost	R-3 Rate	R-3 OT Rate	Hrs to Complete	Per Unit Charge	OT Per Unit Charge
NA	Wipe Test Kit	21				21.00	21
NA	Cost Recovery Charge		107.36	116.63	0.25	26.84	29.16
						<b>47.84</b>	<b>50.16</b>

### Schedule 16b, Nuclear Gauge Badge Tests, R-3NB (\$840 - Used by NWR)

Subclass	Description	Cost	R-3 Rate	R-3 OT Rate	Hrs Per Quarter	No of Badges	Per Unit Charge	OT Per Unit Charge
NA	Badges	79.8					19.95	19.95
NA	Cost Recovery Charge		107.36	116.63	24	130	19.82	21.53
							<b>39.77</b>	<b>41.48</b>

## Schedule 17: NWR Rates for Plant Inspection

Schedule 17-1, Costs for Plant Inspection, Single Operator

Status	Subclass	Description	Qty	Assigned Rate	Annual Cost	Yearly Usage (LRA) *	Hourly Rate for 1 Operator
Active	10-25	Lab Trailers	1	2.78	5,560		
Active	40-03	ACP Vacuum Test Kit	2	0.13	520		
Active	41-11	Portable Counter Top Oven	2	0.19	760		
Active	41-07	Gyratory Compactor	1	1.24	2,480		
Active	41-03	Sieve Shaker	1	0.14	280		
Active	41-19	Aggregate Test Kit	1	0.14	280		
Active	41-33	NCAT Asphalt Content Tester	1	0.45	900		
Active	40-02	Electronic Balance	2	0.16	640		
Active	42-02	SE Shaker	1	0.10	200		
		Utilities			440		
		Propane			50		
					<b>12,110</b>	<b>215</b>	<b>56.33</b>

Schedule 17-2, Costs for Plant Inspection, Dual Operator

Status	Subclass	Description	Qty	Assigned Rate	Annual Cost	Yearly Usage (LRA) *	Hourly Rate for 2 Operators
Active	10-25	Lab Trailers	1	2.78	5,560		
Active	40-03	ACP Vacuum Test Kit	2	0.13	520		
Active	41-11	Portable Counter Top Oven	2	0.19	760		
Active	41-07	Gyratory Compactor	1	1.24	2,480		
Active	41-03	Sieve Shaker	1	0.14	280		
Active	41-19	Aggregate Test Kit	1	0.14	280		
Active	41-33	NCAT Asphalt Content Tester	1	0.45	900		
Active	40-02	Electronic Balance	2	0.16	640		
Active	42-02	SE Shaker	1	0.10	200		
		Utilities		0.00	440		
		Propane		0.00	50		
					<b>12,110</b>	<b>215</b>	<b>28.16</b>

## Schedule 18, Laboratory Equipment Charges

Assigned Yearly Rate	Testing FTEs	Testing Hours	Cost Per Labor Hour
702,819	26.5	47,363	\$ 14.84



## Section 8

### Certification of Cost Recovery Plan

#### *Materials Laboratory*

This is to certify that I have reviewed the cost allocation plan submitted herewith and to the best of my knowledge and belief:

1. All costs included in this proposal are used to establish cost allocations or billings for Fiscal Year 2014 are allowable in accordance with the requirements of the Federal award(s) to which they apply and 2 CFR Part 225, "Cost Principles for State and Local Governments." Unallowable costs have been adjusted for in allocating costs as indicated in the cost allocation plan.
2. All costs included in this proposal are properly allocable to Federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently.

I declare that the foregoing is true and correct:

Governmental Unit: Washington State Department of Transportation

Signature: \_\_\_\_\_

Name of Official: Bob Covington, CPA

Title: Director, Division of Accounting and Financial Services

Date of Execution: Month, Day, Year